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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,341

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Hiroki Ueno

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EXAMINER

TRAN, BINH Q

ART UNIT

PAPER NUMBER

3748

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/574,341	<b>Applicant(s)</b> UENO, HIROKI	
	<b>Examiner</b> BINH Q. TRAN	<b>Art Unit</b> 3748	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6 and 7 is/are rejected.
- 7) ☒ Claim(s) 2, 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/06; 09/06; 03/09</u> .                                     | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claims 1, 3-4, and 6 are rejected under 35 U.S.C. 102 (b) as being anticipated by Stutzenberger et al. (Stutzenberger) (Patent Number 5,605,042).***

Regarding claims 1 and 4, Stutzenberger discloses an exhaust gas purifying apparatus (1) for an engine comprising: a reduction catalyst (2) which is arranged in an exhaust system of the engine, for reducing and purifying nitrogen oxide in an exhaust gas using a reducing agent (e.g. See col. 2, lines 35-58); reducing agent supply means (11, 6) having an injection nozzle (4) which is supplied with a reducing agent together with compressed air (19, 5) and atomizes said reducing agent, and which injection-supplies this to an exhaust gas on an upstream side of said reduction catalyst inside an exhaust gas passage of said exhaust system; and temperature detection means (T) which is provided in the vicinity of said injection nozzle on the upstream side in the exhaust gas passage (1), and which detects the exhaust gas temperature inside said exhaust gas passage (e.g. See col. 3, lines 1-51); wherein said reducing agent supply means uses a detection signal of the exhaust gas temperature from said temperature detection means to set, for that exhaust gas temperature, a supply quantity at or above a lower limit for cooling the

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interior of said injection nozzle to below a temperature at which the reducing agent crystallizes, and supplies reducing agent to said injection nozzle (e.g. See col. 4, lines 47-62); wherein said reducing agent supply means is provided with pressure detection means for detecting an internal pressure of said injection nozzle, and uses a detection signal of the internal pressure of said injection nozzle to stop supply of compressed air and reducing agent to the injection nozzle when the internal pressure reaches or exceeds a predetermined value (e.g. See col. 3, lines 21-51), and uses a detection signal of the exhaust gas temperature from said temperature detection means to restart supply of compressed air and reducing agent to the injection nozzle when the exhaust gas temperature in the vicinity of the injection nozzle reaches or exceeds the melting point of the reducing agent (e.g. See col. 3, lines 21-51; col. 4, lines 47-62).

Regarding claims 3 and 6, Stutzenberger further discloses wherein said reducing agent is a urea aqueous solution (e.g. See col. 3, lines 1-51).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stutzenberger in view of design choice.***

Regarding claim 7, Stutzenberger discloses all the claimed limitation as discussed above except the exhaust gas temperature is set to be 132 °C or thereabove.

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Regarding the specific range of the exhaust gas temperature, it is the examiner's position that a range from 132 °C or thereabove of the exhaust gas temperature, would have been an obvious matter of design choice well within the level of ordinary skill in the art, depending on variables such as mass flow rate of the exhaust gas, as well as the size of the engine, properties of materials for making the NOx storage catalyst, and the controlled temperature of the catalytic converter. Moreover, there is nothing in the record which establishes that the claimed parameters present a novel or unexpected result, and such modification, i.e. choosing from a finite number of predictable solutions, is not of innovation but of ordinary skill and common sense. (See *KSR International Co. v. Teleflex Inc.*, 550 U.S.--, 82 USPQ2d 1385 (April 30, 2007)).

Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art. In *re Dreyfus*, 22 CCPA (Patents) 830, 73 F.2d 931, 24 USPQ 52; In *re Waite et al.*, 35 CCPA (Patents) 1117, 168 F.2d 104, 77 USPQ 586. Such ranges are termed "critical" ranges, and the applicant has the burden of proving such criticality. In *re Swenson et al.*, 30 CCPA (Patents) 809, 132 F.2d 1020, 56 USPQ 372; In *re Scherl*, 33 CCPA (Patents) 1193, 156 F.2d 72, 70 USPQ 204. However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In *re Sola*, 22 CCPA (Patents) 1313, 77 F.2d 627, 25 USPQ 433; In *re Normann et al.*, 32 CCPA (Patents) 1248, 150 F.2d 627, 66 USPQ 308; In *re Irmischer*, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior

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art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

### ***Allowable Subject Matter***

Claims 2 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Since allowable subject matter has been indicated, applicant is encouraged to submit **Final Formal Drawings (If Needed)** in response to this Office action. The early submission of formal drawings will permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

### ***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of five patents:

King et al. (Pat. No. 6167698), Tost (Pat. No. 6192677), Hofmann et al. (Pat. No. 6539708), Wu (Pat. No. 6526746), and Weisweiler et al. (Pat. No. 6301879) all disclose an exhaust gas purification for use with an internal combustion engine.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Binh Tran whose telephone number is (571) 272-4865. The examiner can normally be reached on Monday-Friday from 8:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (571) 272-4859. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BINH Q. TRAN/

Binh Q. Tran

Primary Examiner, Art Unit 3748

June 17, 2009